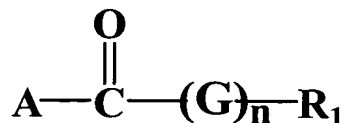
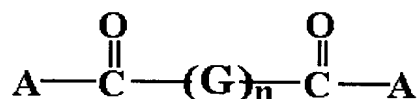


What is claimed is:

1 1. A liquid crystal compound with high helical
2 twisting power having a formula (I), of:



3
4 or a formula (II), of:



5
6 wherein

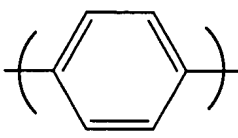
7 A comprises naturally occurring organic multi-ring
8 alcoholates selected from alcoholates of
9 terpenol, borneol, cinchonidine, and quinine;

10 R_1 is hydrogen, alkyl, thioalkyl, or alkyloxy group,
11 wherein alkyl, thioalkyl, and alkyloxy group
12 can be straight or branched and have 1 to 10
13 carbon atoms optionally substituted with at
14 least one fluorine atom;

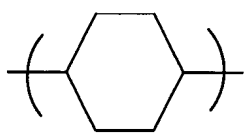
15 n is 1, 2, or 3; and

16 G is the same or different and is unsubstituted or
17 substituted cycloalkyl, heterocyclic, aryl,
18 heteroaryl, arylalkyl, or heteroarylalkyl
19 group, and is optionally substituted with at
20 least one fluorine atom, alkyl, or alkyloxy
21 group.

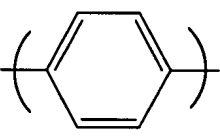
1 2. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_6H_{13}$, n is 1, A is

3 alcolholate of terpenol, and G is  .

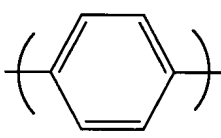
1 3. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-C_3H_7$, n is 1, A is

3 alcolholate of terpenol, and G is  .

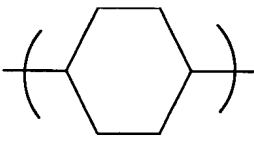
1 4. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_{10}H_{21}$, n is 2, A is

3 alcolholate of terpenol, and G is  .

1 5. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_6H_{13}$, n is 1, A is

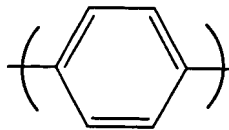
3 alcolholate of borneol, and G is  .

1 6. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-C_3H_7$, n is 1, A is

3 alcolholate of borneol, and G is  .

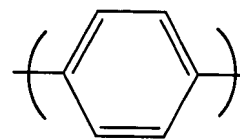
1 7. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_{10}H_{21}$, n is 2, A is

3 alcolholate of borneol, and G is



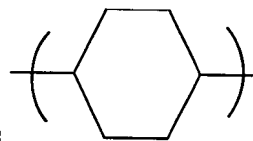
1 8. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_6H_{13}$, n is 1, A is

3 alcolholate of cinchonidine, and G is



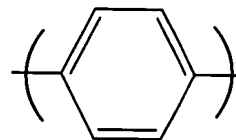
1 9. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-C_3H_7$, n is 1, A is

3 alcolholate of cinchonidine, and G is



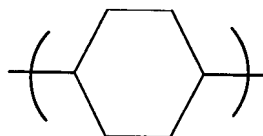
1 10. The liquid crystal compound having formula (I)
2 as claimed in claim 1, wherein R_1 is $-OC_{10}H_{21}$, n is 2, A is

3 alcolholate of cinchonidine, and G is



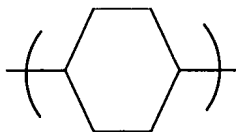
1 11. The liquid crystal compound having formula (II)
2 as claimed in claim 1, wherein n is 1, A is alcolholate

3 of terpenol, and G is



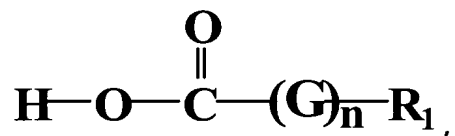
12. The liquid crystal compound having formula (II)
as claimed in claim 1, wherein n is 1, A is alcolholate

of borneol, and G is

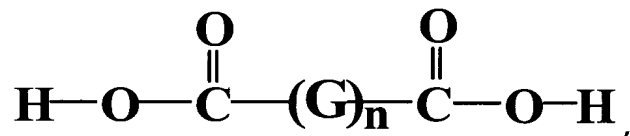


13. A method for preparing liquid crystal compounds
with high helical twisting power, comprising:

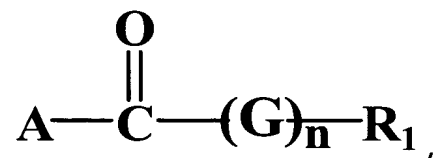
reacting an organic acid represented by a formula
(III) of:



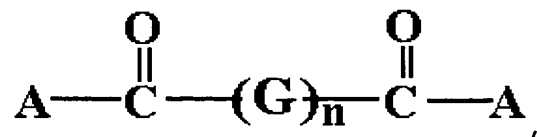
or a formula (IV) of:



and a natural alcohol with optical activity
undergoing esterification to obtain a liquid
crystal compound represented by a formula (I)
of:



or a formula (II) of:



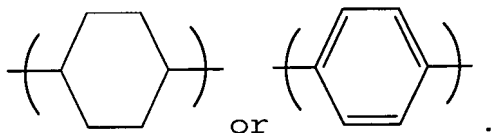
wherein

16 R_1 is hydrogen, alkyl, thioalkyl, or alkyloxy group,
17 wherein alkyl, thioalkyl, and alkyloxy group
18 can be straight or branched and have 1 to 10
19 carbon atoms optionally substituted with at
20 least one fluorine atom;
21 n is 1, 2, or 3; and
22 G is the same or different and is unsubstituted or
23 substituted cycloalkyl, heterocyclic, aryl,
24 heteroaryl, arylalkyl, or heteroarylalkyl
25 group, and is optionally substituted with at
26 least one fluorine atom, alkyl, or alkyloxy
27 group.

1 14. The method as claimed in claim 13, wherein the
2 natural alcohol with optical activity is terpenol,
3 borneol, cinchonidine, quinine, or derivatives thereof.

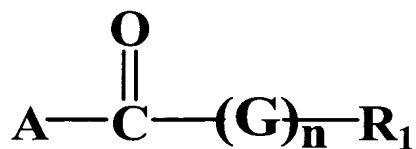
1 15. The method as claimed in claim 13, wherein the
2 organic acid is benzoic acid, cyclohexane carboxylic
3 acid, biphenyl carboxylic acid, para-cyclohexane
4 dicarboxylic acid, terephthalic acid, 4-n-hexyloxy-
5 benzoic acid, 4-n-propyl-cyclohexanecarboxylic acid, 4'-
6 decyloxy-biphenyl-4-carboxylic acid, or cyclohexane-1,4-
7 dicarboxylic acid, and is optionally substituted.

1 16. The method as claimed in claim 13, wherein G is



3 17. A liquid crystal composition, comprising:

at least one liquid crystal compound represented by
a formula (I) of:



or a formula (II) of:



at a ratio from 3wt% to 30wt%, based on the weight
of the liquid crystal composition; and
a liquid crystal at a ratio from 3wt% to 97wt%,
based on the weight of the liquid crystal
composition.

18. The liquid crystal composition as claimed in
claim 17, wherein the at least one liquid crystal
compound represented by formula (I) or formula (II) is at
a ratio from 5wt% to 20wt%.

19. The liquid crystal composition as claimed in
claim 17, wherein the liquid crystal is a liquid crystal
used in TN-LCD, STN-LCD, SSTN-LCD or TFT-LCD.

20. The liquid crystal composition as claimed in
claim 17, wherein the liquid crystal composition is used
in preparation of reflective polarizer or color filter.